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6b. OFFICE SYMBOL  
(if applicable)

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Naval Ocean Systems Center

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K. Campbell

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patents

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

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☐ UNCLASSIFIED/UNLIMITED ☒ SAME AS RPT ☐ DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION

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22a. NAME OF RESPONSIBLE PERSON

22b. TELEPHONE (include Area Code)

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2050

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# Selected Patents Available for License from the Naval Ocean Systems Center

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## **Outline**

- **NOSC**
- **Selected patents**
- **Other available patents**
- **Points of contact**

**NOSCE**

**Real-time Ultrahigh Resolution Image  
Projection Display Using Laser-addressed  
Liquid Crystal Light Valve  
(U.S. Patent 4,611,245)**

**Inventor: John Trias  
(619) 553-3588**

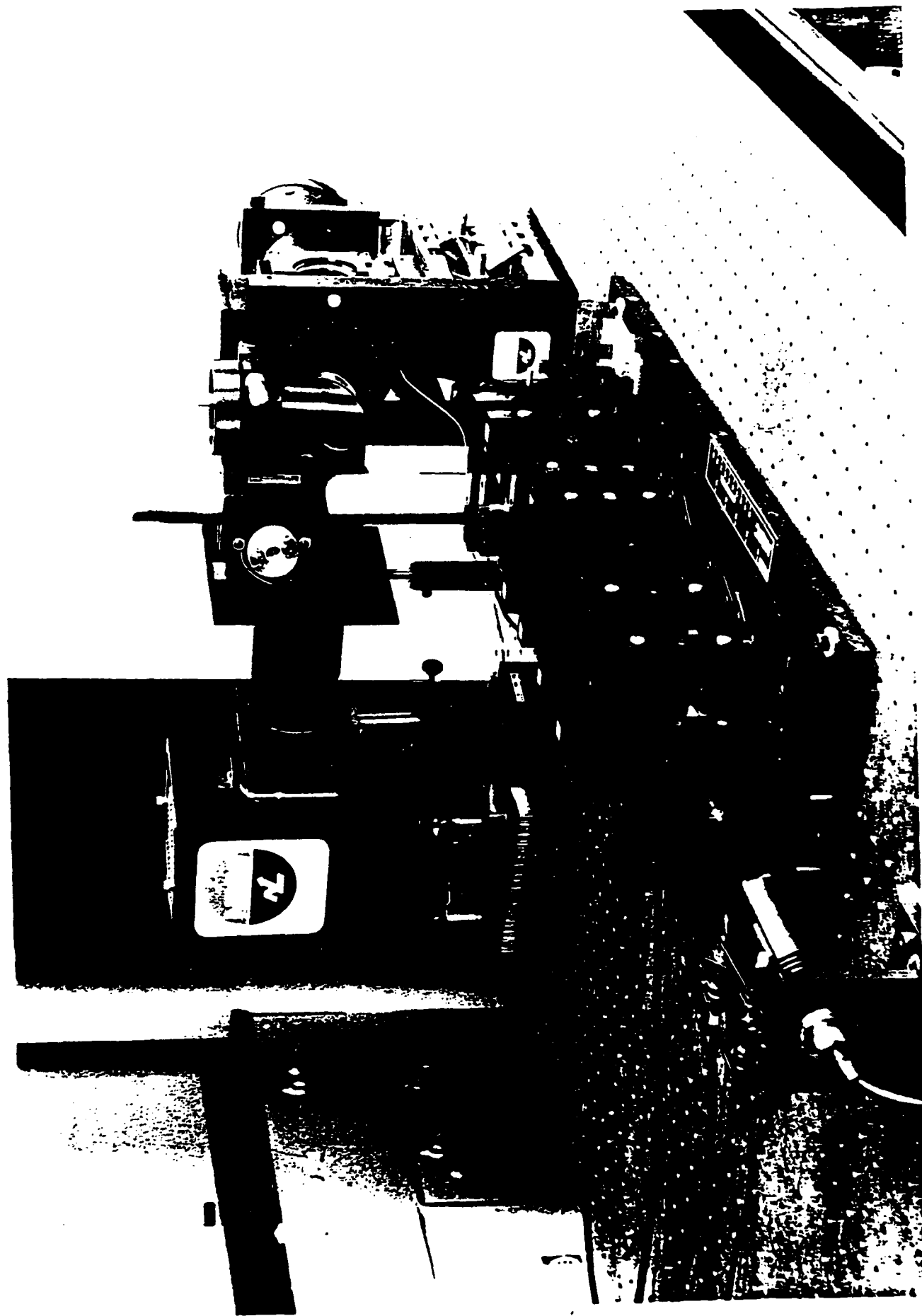
**NOSCO**

## Laser Light Valve Display

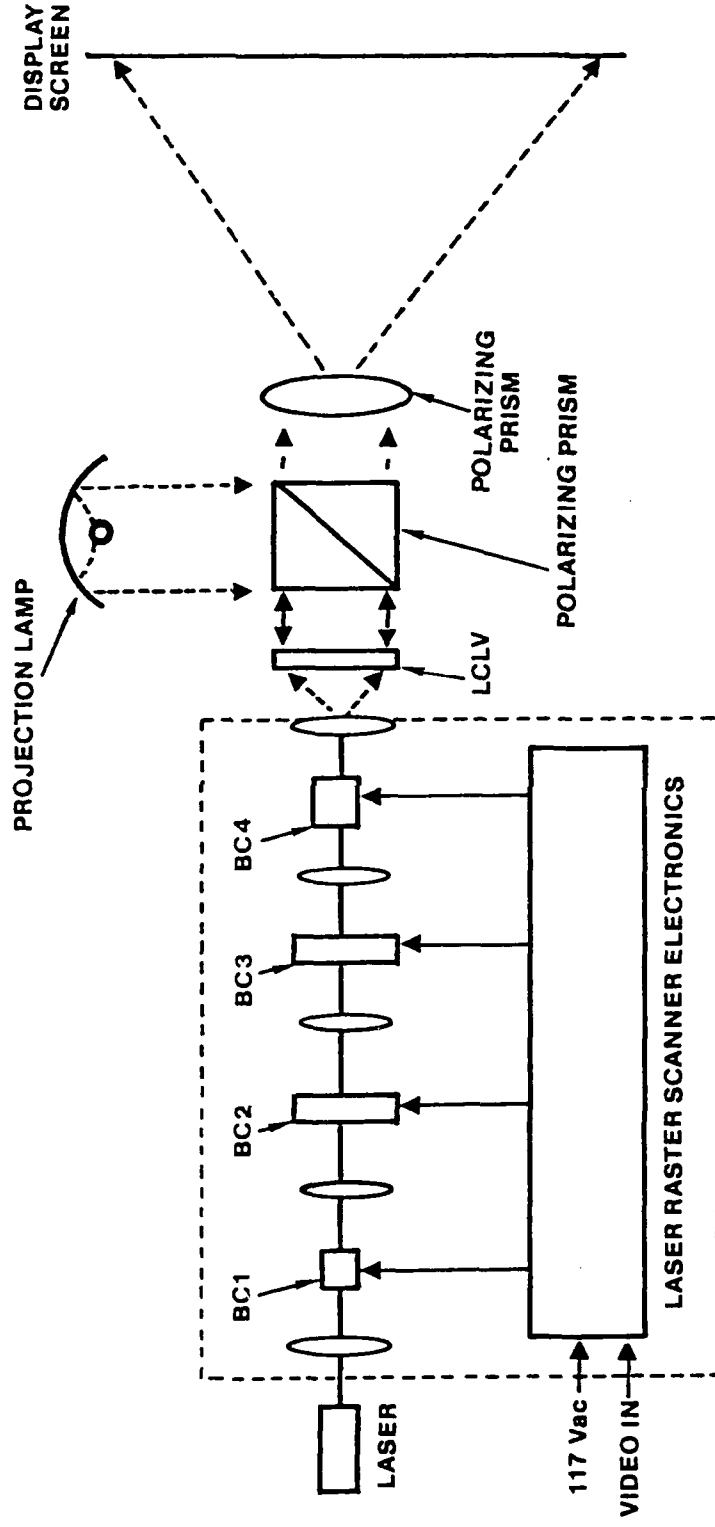


**NOSCO**

## Laser Light Valve Display



# Laser Light Valve Display



BC = Bragg Cell



## **Stage of Development**

**Prototype 525-line laser light valve monochrome projector has been built and demonstrated in the laboratory. Design of a color projector is in progress**

## **Applications**

**Command centers, tactical operation rooms, simulation displays, teleconferencing, entertainment displays**



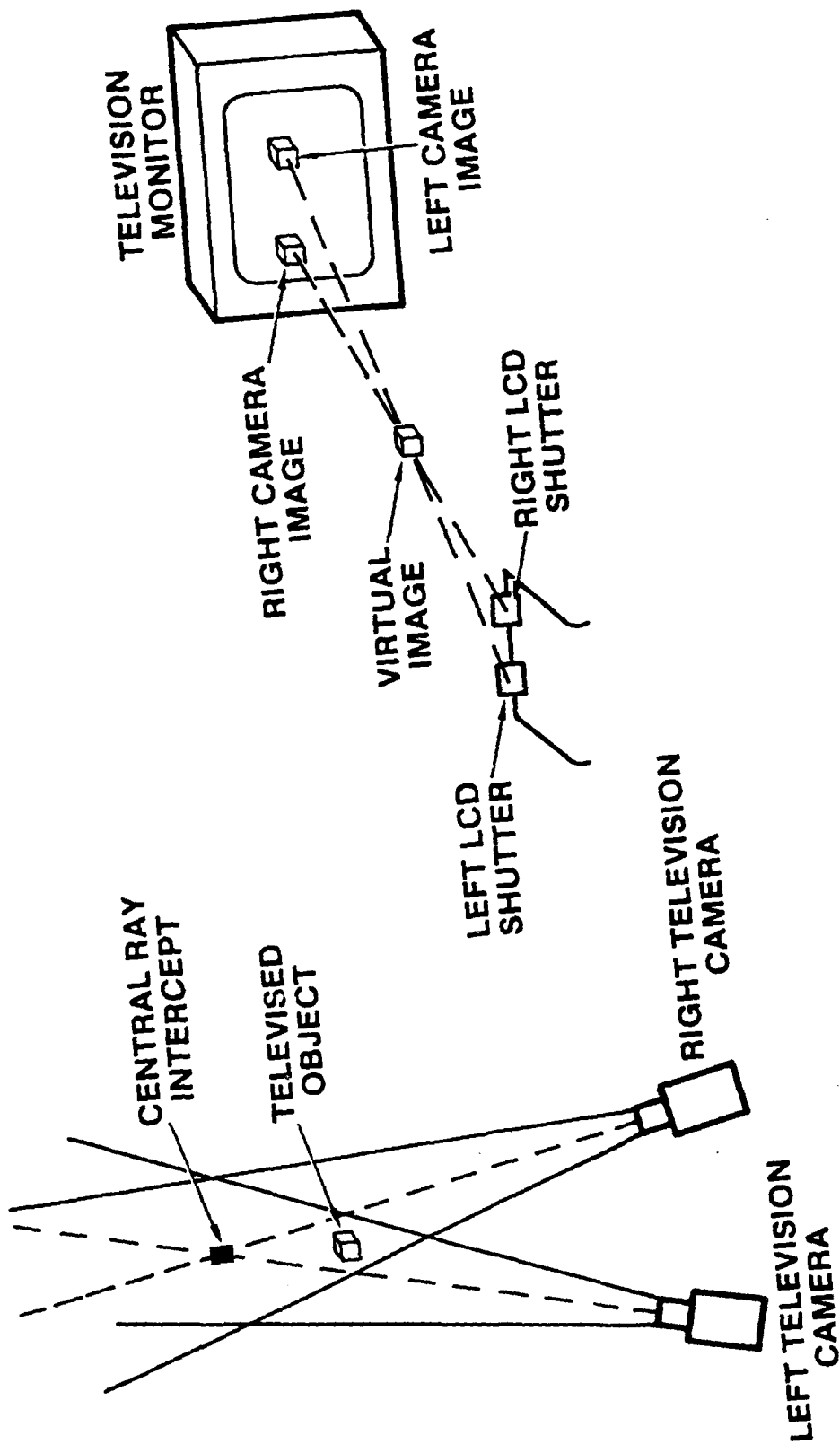
**NOSC**

**Liquid Crystal Stereoscopic Viewer  
(U.S. Patent 4,021,846)**

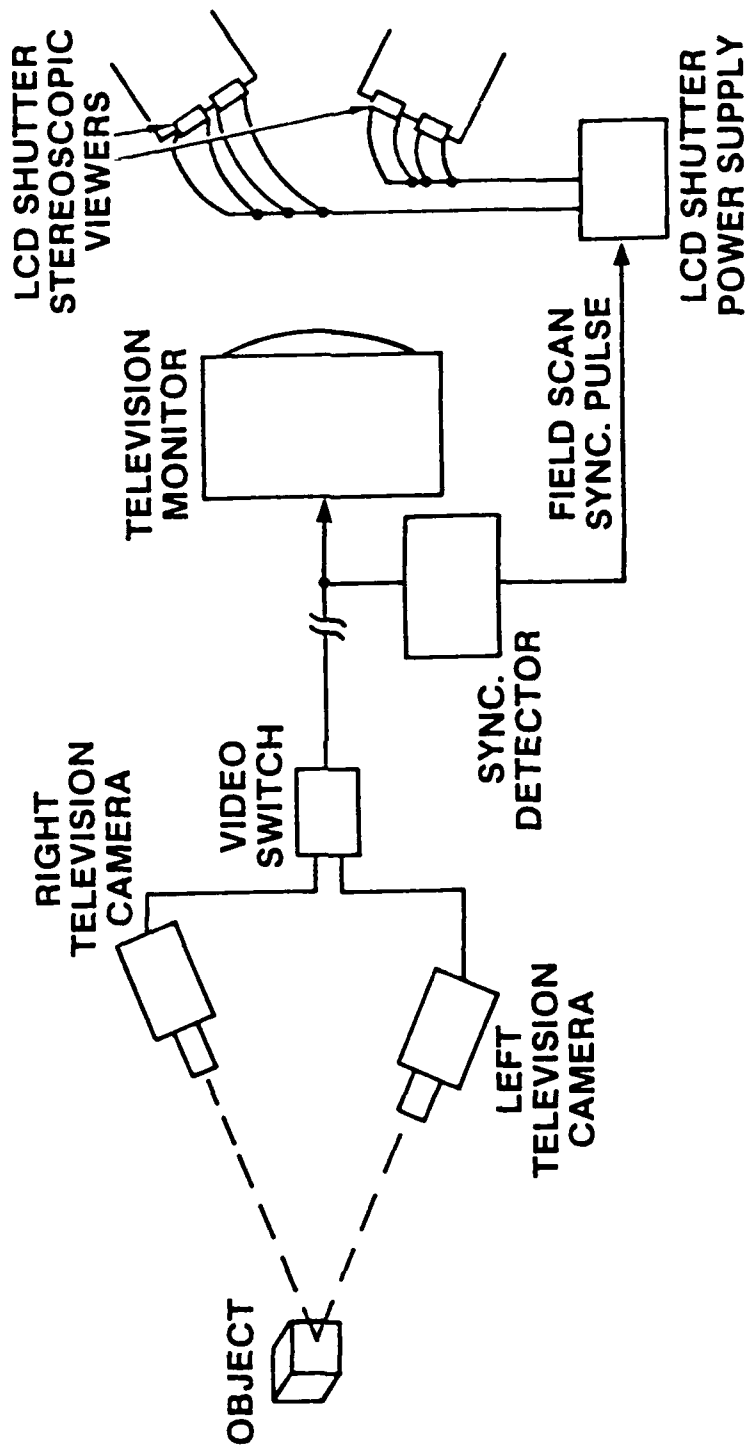
**Inventor: John Roesse  
(619) 553-2052**

**NOSC**

## Stereoscopic Display Geometry



# Liquid Crystal Stereoscopic Television System



**NOSC**

## Liquid Crystal Stereoscopic Viewing





## Features

- Employs low cost, low power LCD shutters
- LCD shutters suitable for mounting in lightweight eyeglass/goggle housings
- Provides full color, full CRT screen stereoscopic images
- No viewer head orientation restrictions
- Compatible with NTSC, PAL, HDTV, etc. video systems and 30Hz/60Hz/120Hz computer-driven display

## **Representative Applications**

- **CAD/CAM**
- **Molecular Modeling**
- **X-ray, CAT Scan, NMR Imaging**
- **Air Traffic Control**
- **Remote Manipulator Control (handling  
radioactive/high temperature materials)**
- **Architectural Visualizations**
- **Video Games**



**Method of Wavelength Multiplexing in  
Fused Single-mode Fiber Couplers  
(U.S. Patent 4,557,553)**

**Automated and Computer-controlled  
Precision Method of Fused Elongated  
Optical Fiber Coupler Fabrication  
(U.S. Patent 4,763,372)**

**Inventor: Matt McLandrich  
(619) 553-1066**

## **Stage of Development**

**The fiber optic couplers have been reduced to practice and are commercially available. Automated precision fabrication has been reduced to practice**

## **Applications**

**This technology is applicable to fiber optic transmission systems employing WDM or duplexing of optical signals at all commercially available wavelengths**



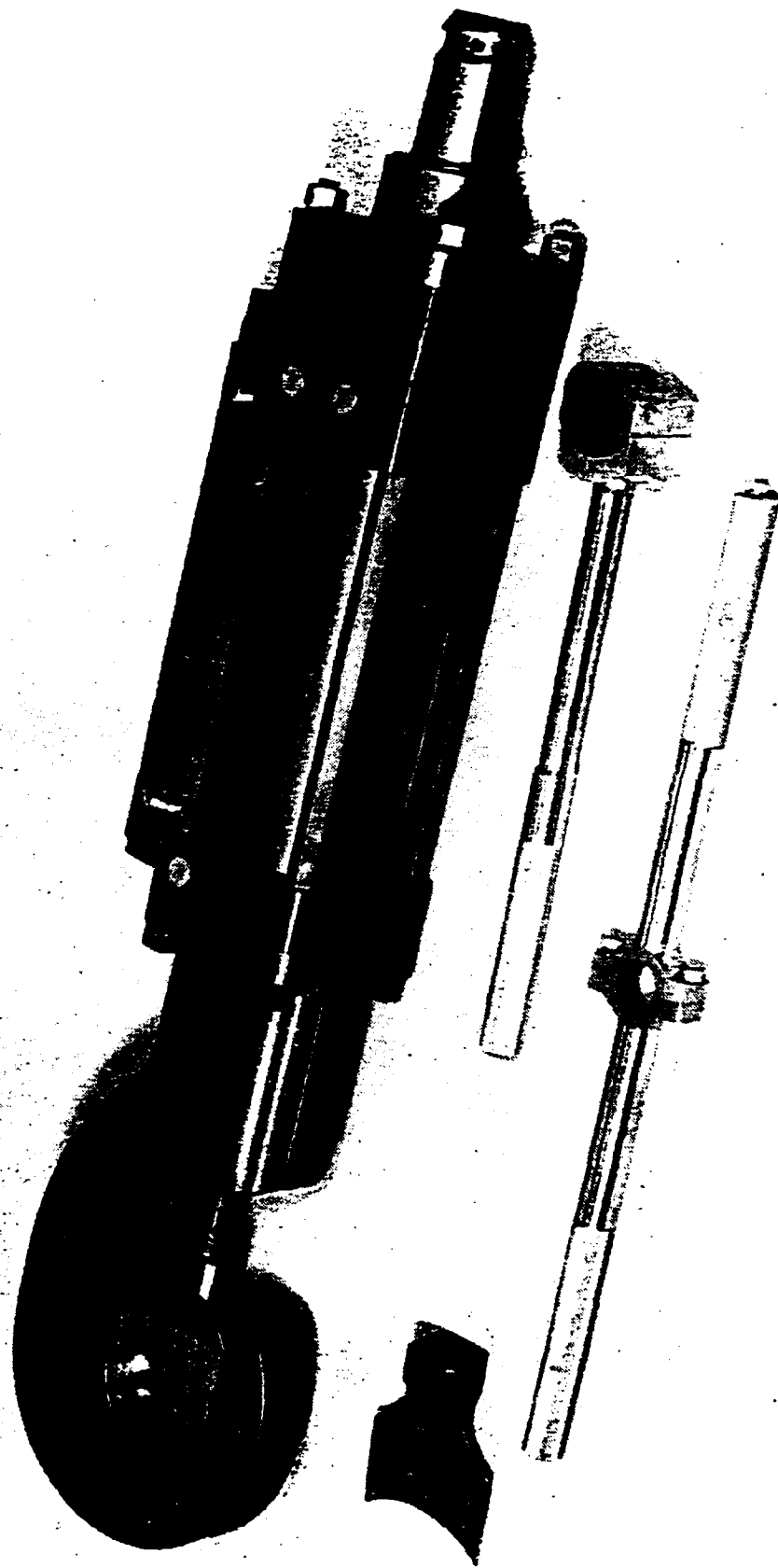


**Deep Submergence Vehicle (DSV)  
Lightweight Cable Cutter  
(U.S. Patent 4,463,496)**

**Inventors: Ron Reich  
Jim Held  
Art Munson  
Jim Hartley  
(619) 553-1913**

**NOSC**

## DSV Lightweight Cable Cutter



**NOSCE**

**Features**

**Self-contained**

**Pressure-compensated hydraulic operations**

**Operates from 2,000 r/min rotary input**





**Wideband VHF Antenna  
(U.S. Patent 4,201,988)**

**Inventor: Doug Dilley  
(619) 553-1411**

**Method and Apparatus for Fabricating  
a Wideband Whip Antenna  
(U.S. Patent 4,243,992)**

**Inventor: Don Forman  
(619) 553-3680**

**NOSC** 

## **Features**

**Small size and weight**

**High efficiency**

**Greater than one octave bandwidth (30–76<sub>K</sub> Hz)**

**Multiple frequency operation**

**High power capability**

**Inexpensive construction technique**

**NOSC**

## **Stage of Development**

**Prototype antennas have been built and are  
in use by the U.S. Marine Corps**

## **Applications**

**Commercial and military vehicles**



## Other Available Patents

Title	U.S. Patent
Thermally Activated Vapor Etchant for InP	4,671,847
System for Measuring Bioluminescence Flash Kinetics	4,563,331
Deep Submergence Vehicle (DSV) Lightweight Cable Cutter	4,463,496
Methods for Making an Undersea, High Pressure Bulkhead Penetrator for Use with Fiber Optic Cables	4,469,339
Wave-powered Buoy Generator	4,492,875
Apparatus for Measuring the Spatial Scalar Variation of a Magnetic Field with Vector Magnetic Sensors on a Moderately Stable Moving Platform	4,492,923
Switching Mixer	4,492,960
Reproducible Standard for Aligning Fiber Optic Connectors Which Employ Graded Refractive Index Rod Lenses	4,509,827





## Other Available Patents (contd)

Title	U.S. Patent
Semiconductor Laser End-facet Coatings for Use in Solid or Liquid Environments	4,510,607
Retro-elective Alignment Technique for Fiber Optical Connectors	4,545,643
Method of Wavelength Multiplexing in Fused Single-mode Fiber Couplers	4,557,553
Automatic Character Recognition System	4,567,609
Remotely Activated Cable Cutter	4,495,849
Matrix-matrix Multiplication Using an Electro-optical Systolic/Engagement Array Processing Architecture	4,603,398
Real-time Ultrahigh Resolution Image Projection Display Using Laser-addressed Liquid Crystal Light Valves	4,611,245

## Other Available Patents (contd)

Title	U.S. Patent
Combination Frangible Nose Cap Electromagnetic Interference Shield	4,593,637
Method of Curing Patches on Contoured Surfaces	4,652,319
Universal Test Board for Serial Data	4,658,209
Collapsible Salvage Drum and Method	4,658,745
Generation of Ohmic Contacts on Indium Phosphide	4,662,063
Hermetic High-pressure Fiber Optic Bulkhead Penetrator	4,682,846
Metal Matrix Composite Piston Head and Method of Fabrication	4,706,550
Single Crystal Thin Films	4,707,217
Portable, Electronically Controlled, Integrated, P.C.B. Rework Station	4,708,278

## **Other Available Patents (contd)**

<b>Title</b>	<b>U.S. Patent</b>
<b>Fabrication of Semiconductor Devices in Recrystallized Semiconductor Films on Electro-optic Substrates</b>	<b>4,649,624</b>
<b>Deep Ocean Wideband Acoustic Baffle</b>	<b>4,488,271</b>
<b>Transmissive and Reflective Liquid Crystal Display</b>	<b>4,315,258</b>
<b>Remote Self-Contained Undersea Monitor</b>	<b>4,480,323</b>
<b>Lithium-6 coated Wire Mesh Neutron Detector</b>	<b>4,481,421</b>
<b>Transmitting Adaptive Array Antenna</b>	<b>4,492,962</b>
<b>Shielding Apparatus for Microwave Thawing</b>	<b>4,503,307</b>
<b>High-speed Optically Controlled Sampling System</b>	<b>4,546,249</b>
<b>Vector Summation Power Amplifier</b>	<b>4,575,811</b>

## Other Available Patents (contd)

Title	U.S. Patent
Programmable Time Varying Attenuator	4,625,332
Microprocessor-based Programmable Frequency Controller for Frequency Agile Radar Advanced Cube Processor	4,631,541
Concretization of High-level Radioactive Source in Marine Sediment	4,636,358
Intercept Resistant Data Transmission System	4,661,980
Variable Temperature Trap	4,610,169
Constant Rise AGC Circuit	4,574,252
Furnace Transient Anneal Process	4,555,273



## Other Available Patents (contd)

Title	U.S. Patent
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Microprocessor-based programmable frequency controller for frequency agile radar advanced cube processor	4,631,541
Concretization of high-level radioactive source in marine sediment	4,636,358
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<b>Deep ocean wideband acoustic baffle</b>	<b>4,488,271</b>
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<b>High-speed optically controlled sampling system</b>	<b>4,546,249</b>
<b>Vector summation power amplifier</b>	<b>4,575,811</b>



## **NOSC Points of Contact for Patent Licensing**

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